

SEMICONDUCTOR VAPOR GROWTH METHOD

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Abstract

PURPOSE: To execute epitaxy of an atomic layer of a compound semiconductor at a low temperature by a method wherein a raw material gas containing a specific alkylated substance and a raw material gas of another element constituting the compound semiconductor are supplied alternately to a growth apparatus.

CONSTITUTION: An alkylated substance of at least one element constituting a compound semiconductor is expressed by a formula $(C_4H_9)_nH_3-nM$ (where M represents a metal element and n is 1 to 3); a raw material gas containing this alkylated substance and a raw material gas of another element constituting the compound semiconductor are supplied alternately to a growth apparatus. That is to say, while the gases flow continuously at a definite flow rate from individual supply sources, they are switched by means of valves 5, 5' and supplied to a reaction tube 1. By this setup, epitaxy of an atomic layer is executed at a substrate temperature, which is by several tens of deg.C lower than a conventional temperature; epitaxial growth having a steep heterointerface can be executed.